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POTOMAC, MARYLAND 20854

A Partial Report

MINDSET

National Styles in Warfare and
the Operational Level of
Planning, Conduct and Analysis

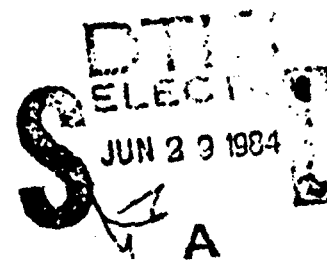
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Washington, C.C. 20301

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A. INTRODUCTION

1. It is a peculiarity of Anglo-Saxon military terminology that it knows of tactics (unit/branch/mixed) and of theater strategy as well as of grand strategy but includes no adequate term for the operational level of warfare - precisely the level that is most salient in the modern tradition of military thought in continental Europe. The gap has not gone unnoticed, and Basil Liddel-Hart for example attempted to give currency to the term "grand tactics" as a substitute, since already by his day the specialized usage of the directly translated term (operational= functioning machine/unit) was too well-established to be redeemed.
2. What makes the matter important for practical purposes is that the absence of the word reflects inadvertence towards the conception of war associated with it, and this in turn reflects a major eccentricity in the modern Anglo-Saxon experience of war. It is not merely that officers do not speak the word but rather that they do not think or practice war in operational terms, or at least do so only in vague and ephemeral ways. The cause of this state of affairs is to be found in the historic circumstances of Anglo-Saxon warfare during this century. In the First World War, American troops were only employed late, and then under French direction; their sphere of planning and action was essentially limited to the tactical level. The British, who did have to endure the full five years and more of that conflict, did not, however, transcend their pre-1914 experience characterized by battalion fights in the colonies. It was precisely the failure of the British Army to extend its mental horizons that the "English" school of post World War I military thinkers (Fuller, Liddel-Hart, etc.) were to deplore, and which they set out to correct. As it has been shown elsewhere, their advocacy of large-unit armored warfare in depth was made possible by the availability of motor vehicles to fight war on a scale that would transcend the tactical battlefield - and was not simply inspired by the need to find employment for the

newly invented tank. Their ideas were not tank-driven but merely tank-using; the motivating factor was the powerful urge to escape the bloody stalemate of the (tactical) battlefields of World War I.

3. Nor did the radically different character of the Second World War suffice to establish the operational level in the conduct, planning and analysis of Anglo-Saxon warfare. To be sure, there were isolated examples of generalship at the operational level, and indeed very fine examples indeed but they, and all that they implied, never became the common property of the national armies as a whole, but remained rather the trade secrets and personal attributes of men such as Douglas MacArthur, Patton and - in the British case - O'Connor, victor of the first North African campaign.
4. Otherwise, in World War II as in Korea and of necessity in Vietnam, American warfare on the ground was conducted almost exclusively at the tactical level, and at the level of theater strategy above that. The theater strategy of 1944 in France (as earlier in Italy) was characterized by the broad-front advance of units which were engaged in tactical combat seriatim. Above the purely tactical level, the important decisions were primarily of a logistic character; the overall supply dictated the rate of advance, while its distribution would set the vectors of the advancing front. And these were of course the key decisions at the level of theater strategy.
5. Soon after the end of World War II it became fashionable to criticize the broad-front theater strategy pursued after D-Day but such criticisms overlooked the central fact that the American comparative advantage was in sheer material resources while U.S. (and British) middle-echelon staff and command skills were of a low order. The over-personalized criticism of Eisenhower's strategy that characterizes this literature certainly did not result in the popularization of any "operational" concepts of war. In Korea once again, the predominant pattern of combat activity was set by a front-wide advance theater strategy, which practically left no room below its level for anything more ambitious than tactical actions. The brilliant exception was of course

the Inchon landing, but characteristically this experience was absorbed as if it were no more than the virtuoso performance of Douglas MacArthur, instead of being recognized as a particular manifestation of a general phenomenon i.e., the concerted use of tactical means to achieve operational-level results that are much more than the sum of the tactical parts.

6. Since the Korean War, as before it, American ground forces have continued to absorb new generations of weapons, their mobility in and between theaters has continued to improve, logistic systems have been computerized and much attention has been devoted to the management of resources at all levels, even while the entire organism continues to function only at the lowest and the highest of the military levels, while the middle, operational, level remains undeveloped.
7. The scope and importance of action at the operational level is inversely proportional to the attrition content of the overall style of war that is pursued. In the extreme case of a pure attrition style, there are only techniques and tactics and there is no action at all at the operational level. Techniques of reconnaissance, movement, re-supply, etc., suffice to bring firepower-producing battle forces within killing range of conveniently targetable aggregations of enemy forces and supporting structures. Each set of targets is then to be destroyed by the cumulative effect of firepower, victory being achieved when the proportion of each set, (and the proportion of all the sets) that is destroyed suffices to induce retreat or surrender; or, theoretically, when the full inventory of enemy forces is destroyed.
8. It is understood of course that in deliberately seeking out to engage aggregations of enemy targets, the reciprocal effect of their attrition will have to be sustained so that there can be no victory without an overall superiority of net attritive capacity. But aside from that, warfare pursued in a pure attrition style has the great attractions of predictability, and functional linearity.

Since efficiency = effectiveness, and since the whole is (if no more) no less than the sum of the parts, the optimization of all military activities in peace as in war, research and development, procurement, manpower - acquisition, training staff work and command can all be pursued in a systematic fashion, in order to improve the efficiency of the techniques (target acquisition, force-movement, re-supply, etc.) which combine to set the overall efficiency of attritive action.

In theory each resource increment can therefore be unfailingly allocated into the right sub-activity merely by establishing which of these yields the highest marginal product: manpower or equipment, numbers or quality, fire-control or ammunition enhancements and so on.

9. The functions of war and war-preparation are therefore governed by mathematical relationships exactly analogous to those of micro-economics, and the conduct of warfare at all levels is identical to the management of a profit-maximizing industrial enterprise. At all the micro-levels therefore, adherence to a pure attrition style enables the actors to pursue efficiency within sub-contexts that are clearly delineated and with aims and means that are readily amenable to objective assessment.

This in turn renders possible the overall management of defense by the use of marginalist analytical techniques with uncertainties being confined to technical unknowns; only structural obstacles (e.g. self-serving bureaucracies, or localist political pressures) remain to interfere with the pursuit of efficiency.

10. At the macro-level finally in a reactive-defensive context, the overall number of enemy force-units (e.g. "40,000 AFVs") defines the quantum of capability needed. At any one time, the shortfall between the force-structure in hand and the force-structure needed to assure victory can thus be determined in a definitive fashion with only locational uncertainties.
11. Thus in the whole complex of war preparation and action, uncertainties are confined to a few irreducibles; otherwise everything can be routinized on the basis of efficiency-maximizing procedures with the

ically exception of the command of sub-units and individuals in direct contact with the enemy, for which a non-managerial method of command of a character inspirational/compellent ("combat leadership") remains necessary.

12. The other phenomenon of war, which stands in a reciprocal relationship to attrition in the spectrum that makes up the overall style of war of nations and services is relational maneuver; and the scope and significance of the operational level of war-preparation and action is a direct function of the relational-maneuver content of the overall style.
13. In relational maneuver, as in attrition, the goal is to incapacitate enemy weapons, structures or forces - or indeed the whole enemy entity but in a radically different way: instead of cumulative destruction, the desired process is systemic disruption - where the "system" may be the whole array of armed forces, some fraction thereof or indeed technical systems pure and simple, e.g. anti-aircraft missiles.
14. In general terms, attrition methods require that strength be applied against strength: the enemy too must be strong where he comes under attack, for a concentration of targets is required to ensure efficiency in the application of effort. By contrast, relational-maneuver requires first the avoidance of the enemy's strength, and second the application of some selective strength against some dimension (physical or psychologic) of enemy weakness. Thus in general, attrition is a quasi-physical process to a large extent (even in pure attrition, systemic disruption intervenes after much destruction has been achieved) so that fairly fixed proportionalities will govern the relationship between the effort expended

* Since a managerial attempt at optimization on the part of the troops/pilots etc., would incline them to evade the danger to which they are exposed. The managerial annexation of all other aspects of war goes so far under the aegis of a pure attrition style that the inevitable residue which cannot be annexed, that is the systematic exposure to death on the part of "front-line" manpower (pilots, infantrymen, tank crews, etc.) is a source of chronic friction whose upward effects undermine efficiency, and whose downward effects erode morale (the former by creating pressures for sub-optimizing but putatively life-saving expenditures; the latter because of the resentment of exposed individuals against a system that could seemingly remove them from risk, or at least reduce risks by further increments of expenditures).

and the results achieved. By contrast, relational-maneuver does not guarantee any level of results (being capable of failing totally) but neither is it constrained by any proportional ceiling between the effort made and the maximal results that may be achieved

15. It is because of this non-proportionality that relational-maneuver methods are compulsory for the side weaker in resources, which simply cannot prevail by attrition. Otherwise, relational-maneuver solutions are attractive insofar as they offer higher potential payoffs against the effort expended. But the greater the relational-maneuver content of an overall combat solution or style of war the greater also will be the risk of failure. And relational-maneuver solutions are apt to fail catastrophically, unlike attrition solutions which generally fail "gracefully".
16. The vulnerability to catastrophic failure of relational-maneuver methods reflects their dependence on the precise application of effort against identified points of weakness; this in turn requires a close understanding of the inner workings of the "system" that is to be disrupted, whether the "system" is a missile and the knowledge needed has an exact technical character, or an entire army and the knowledge needed is, say, a matter of understanding its command ethos and operational propensities. Somewhat loosely, one may characterize attrition methods as resource-based and resource-driven, while relational-maneuver methods are knowledge-based and knowledge-dependent. Both the high potential payoff of the latter and also their vulnerability to catastrophic failure derive from this same quality.
17. Since in any real-life act of warfare both pure attrition and pure relational maneuver are rare phenomena, what matters is the content of each in the overall action whether that is as narrow as a single tactical episode, or as broad as national style of warfare or some war-preparation activity, such as the development of weapons. The higher the relational-maneuver content, the higher the potential payoff and the higher the potential risk of (catastrophic) failure due to the misapplication of the effort. By contrast, some degree of

"graceful" failure is of course an inherent and normal aspect of all warfare at all times due to generic errors at all levels.

18. Both attrition and relational-maneuver are still perhaps most familiar in the form of ground warfare, where the contrasting images of the trench battles of the First World War - symmetrical brute-force engagements not far removed from pure attrition - and the high-speed encirclement battles of the 1939 - 1942 Blitzkrieg period of the Second World War - characterized by low-casualty high-risk actions - provide a vivid comparison. Or to show equal contrast in one national army, in one war and in a single theater of operations, the theater-wide disruptive maneuver of MacArthur's Inchon landing may be compared with the cumulative firepower engagements of the "Ridgeway" offensives. In what follows the comparative analysis of contrasting national styles of warfare will be conducted exclusively in terms of ground combat.

19. Before that, however, it is to be recognized that both attrition and relational-maneuver are universal phenomena that pervade all aspects of war and war preparation. This is illustrated below is a set of direct comparisons.

(i) E.G. target planning in "strategic" nuclear warfare:

Attrition

Incapacitate enemy society by destroying high percentage of all industry and all population by the least variable of kill effects (e.g. blast rather than weather-dependent heat).

Relational-Maneuver

Incapacitate enemy political-military system by destroying political and military command centers and organizational headquarters; destroy critical war-fighting and recovery facilities (e.g. industrial bottlenecks viz. straight floor-space). Rely on fine-tuned kill effects.

(ii) E.G. suppression of ballistic missile defenses in "strategic" (or "theater) nuclear war:

Attrition

The operational method is "exhaustion", where the number of warheads allocated to each target includes an allowance for all possible intercepts by the enemy BMD. The deployment

Relational-Maneuver

Rely on deception measures to neutralize the enemy BMD. The deployment requirement is for light-weight warhead-simulating decoys, other ECM, evasion terminal flight paths (= MARV) and/or electronic attack upon the identified weak point of the

requirement is therefore for an economical multiplicity of warheads (= MIRV).

system, e.g. radar vulnerability to "blackout" effects achieved by precursor warheads detonated at high altitude.

(iii) E.G. in guerilla warfare, at the level of theater strategy:

Attrition

Reduce cumulatively the number of guerillas in a multiplicity of tactical engagements leading to kills or capture. Victory when own kill/capture rates exceed enemy recruitment rates.

Relational-Maneuver

Separate guerillas from the sustaining base, i.e., the local population by general political action, by area perimeters and/or by point perimeters (e.g. village-defense/police units). Victory when guerilla declines as food/information/ recruits are denied.

(iv) E.G. in guerilla warfare, at the operational level:

Attrition

Concentric sweeps by large formations to create (artificially) conveniently targetable concentrations of guerillas to be then reduced by firepower. High technicity and need for close coordination preclude multinational groupings.

Relational-Maneuver

Find and attack command groupings, logistic stocks etc. by guerilla-like low-signature raiding parties. Freedom to mix locals and outsiders in such self-contained low-technicity units.

(v) E.G. in guerilla warfare, at the tactical level:

Attrition

Maintain the offensive by the combined action of fire-drawing "patrols", quick-reaction reinforcement groups and coordinated fires from airpower and artillery fire-bases.

Relational-Maneuver

Maintain the tactical defensive: let the guerillas attack well defended villages and stronger points forcing them to act without benefit of concealment.

(vi) E.G. in guerilla warfare, organizational/deployment implications:

Attrition

Deploy forces in standard large formations of conventional form (divisions, brigades, etc.). Airpower and artillery are the chief instruments.

Relational-Maneuver

Fragment forces into small defense groups down to squad size or less, raiding groups of platoon size or less, etc. Aircraft used for observation and liaison; heaviest weapon in normal use is the mortar.

(vii) E.G. in conventional war-preparation, theater-level deployment structures:

Attrition

Deploy standard-format general-purpose forces to match total computed enemy capabilities. Freely rotate command and staff personnel between theaters.

Relational-Maneuver

Deploy terrain-specialized forces configured especially to exploit limitations and weaknesses of the particular enemy forces in each theater. Command and staff officers assigned to the theater on a long-term basis, with in-theater promotion. Dissimilar TQ&Es.

(viii) E.G. in war-preparation, research and development goals:

Attrition

Develop best possible systems to maximize all-round capabilities; hence develop systems ab initio to minimize starting constraints. Hence long time-lags between generations, and broad change needed in supporting maintenance structures upon introduction. Hence only major advances justify development efforts; thus the state-of-the art must be advanced forcefully, hence still longer time lags to introduction, and there will be only a coincidental correspondence between systems so acquired and the specific configuration of combat needs upon deployment.

Engineering priorities and scientific ambition lead to revolutionary innovation from time to time.

Final design determined by limits of engineering feasibility, and cost disciplines.

Relational-Maneuver

Examine in detail relevant enemy forces and weapons in relevant theaters. Identify specific limitations and weaknesses. Develop or modify equipment to obtain fine-tuning of capabilities against those forces and weapons. Modify and develop incrementally to maintain a good fit as enemy forces/weapons evolve. Since new items are introduced at short intervals, accept design constraints to ensure compatibility (inter-equipment and also with supporting structures). No need to force the state of the art. Create a continuum between theater in-theater modification and central developmental process.

Combat priorities and theater needs lead to evolutionary development.

Design determined by chosen operational methods of war and their tactical requirements.

(ix) E.G. coping with air defenses in tactical air warfare at the level of force-strategy:

Attrition

Plan a preliminary suppression campaign to clear the way for offensive air operations.

Relational-Maneuver

If the enemy in the theater is particularly strong in air defenses (i) reduce reliance on offensive air in the overall theater strategy; (ii) adopt evasion method.

- (x) E.G. coping with air defenses in tactical air warfare at the operational level:

Attrition

Relational-Maneuver

Deploy specialized defense-suppression forces.

Train to underfly and overfly main systems if outright spatial evasion not compatible with operational needs on the ground.

- (xi) E.G. coping with air defenses in tactical air warfare at the technical level:

Attrition

Relational-Maneuver

In ECM Jamming, rely on barrage jamming to maximize reliability.

In ECM Jamming, rely on deceptive jamming to maximize coverage.

- (xii) E.G. the interdiction mission in offensive air, at the operational level:

Attrition

Relational-Maneuver

Focus the attacks wherever target concentrations are most lucrative (including LOCs) to reduce the overall quantum of enemy combat resources; (= "deep interdiction").

Focus air operations where maximum synergism with ground operations are obtainable to enhance the combined disruptive effect. Accept inherent inefficiency as compared to an independent interdiction campaign (= battlefield interdiction).

Command method: independent air command to maximize efficiency.

Command method: air goes where ground is going, hence joint command or ground-subordinated air command, to maximize effectiveness.

20. Having thus illustrated the pervasive nature of each phenomenon in vivid contrast, it is important to recall that both attrition and relational-maneuver will be present in all real-life contexts, and that different national (or service) styles of warfare will be distinguished by the proportion of each in the overall spectrum, rather than by the theoretical alternatives in pure form.

B. ATTRITION AND RELATIONAL-MANEUVER AND THE OPERATIONAL LEVEL OF WAR
IN GROUND WARFARE

1. Having safely established the universality of the phenomenon, one may focus on the attrition/maneuver spectrum in ground warfare without fear that relational-maneuver will be confused with mere movement, or indeed that attrition itself will be understood only in its narrowest tactical form of a straight exchange of firepower.
2. As noted above, the scope and importance of the operational level of warfare is inversely proportional to its attrition content. To the extent that relational-maneuver is important in the overall style of warfare, so is the scope of planning and action at the operational level. (And the opportunities for systemic disruption tend to be greater at the operational level because the "systems" involved tend to be more complex.)
3. One may usefully begin to give concrete definition to the concepts here defined by way of two examples, one well-worn and the other somewhat less familiar, one offensive in strategic orientation and the other defensive, but both examples of operational schemes of warfare with a low attrition content: the deep-penetration armor-driven offensive of the classic Blitzkrieg, and the contemporary Finnish defense-in-depth plan for Lapland.
4. The classic Blitzkrieg of 1939 - 1942 was an operational scheme designed to exploit the potential of armored fighting vehicles and motor transport as well as tactical airpower against front-wide linear defenses. One may distinguish three phases of the overall action: the initial breakthrough, the penetrations, and the "exploitation".
5. In the breakthrough stage, axes of passage were opened in the (linear) defenses of the enemy; at this stage, fairly conventional frontal attacks were launched (and for the Germans in World War II largely with foot infantry and horse-drawn artillery) but only to defeat enemy

forces holding selected narrow segments of the front. The "relational" element of this stage was visible only at the theater level, insofar as soft points could be selected for attack since the immediate areas behind the breakthrough points were of no particular significance in themselves; thus areas of salient importance, likely to be better defended, did not have to be attacked.

6. In the Blitzkrieg, the tactical battle fought at the front was not an end in itself but merely a pre-condition for the next phase. Hence neither the planning nor high-value forces were focused at this stage. So long as the mobile columns spearheaded by the (scarce) tank forces could gain entry into the depth behind the front, it scarcely mattered what happened in the frontal area itself. This allowed the command to behave opportunistically, thus already achieving an advantage over the defender whose command would remain focused on the tactical battles at the front: the eventual reward of successful defense against any one breakthrough attempt would be encirclement and capture once the next phase was executed anyway, through other (successful) breakthrough points.
7. In the penetration phase, the goal of each mobile column was to advance as deeply and as fast as possible behind the frontal defenses, eventually to intersect at nodal points to cut off the corresponding sections of the frontal forces of the defense.
In a tactical view, the long thin columns of vehicles penetrating through hostile territory were very weak, seemingly highly vulnerable to attacks on their flanks; tactically, the columns were of course all flank and no "front". But in an operational view, the mobile columns of penetration were very strong, because their whole orientation, method of warfare (and equipment) gave them a great advantage in tempo and reaction time.
8. In the first place, the columns could maintain a ceaseless forward movement since they could proceed opportunistically, moving down whatever axes roads offered least resistance - so long as they were advancing more or less in the right direction. By contrast, the forces of the

defense capable of movement would have to find and intercept the invasion columns, and would thus need to go towards particular objectives, (of necessity along particular routes), failing in their mission if delayed by friction or by flank-guard penetrations that cut across their path.

9. This strictly mechanical advantage was usually dominated by a command advantage: while the invasion forces did not need detailed instructions - being sufficiently guided by general mission orders and by tactical opportunism along the axes of advance - the action of the mobile forces of the defense would depend on a command adequately informed of the unfolding battle. But the advance of the invasion columns would in itself generate much more "noise" than signals. Typically, the victims of the Blitzkrieg were left only with the choice of paralysis or gross error in "reading" the battle. Flooded with reports of enemy sightings across the entire width of the front and in considerable depth too, the defending commands could either choose to wait for "the dust to settle" (= paralysis) or else proceed to send off their mobile forces in chase of the sightings that seemed most credible and whose direction seemed most dangerous. In a situation characterized by the multiplicity of facts created by the high-tempo of opportunistic armor-driven invasion columns, the chances of sorting out the battle from the confusion were small indeed.
10. Finally, the offense would have the advantage of moving vertically across a front organized horizontally, and its advance would therefore cut LOCs, occupy successive nodal points of the road network and not infrequently overrun command centers, thus further immobilizing the defenders.
11. These three factors resulted in a net temporal advantage for the offense in the observation-decision-action cycle - the decisive factor in deciding the outcome of all forms of reciprocal maneuver: so long as the invasion columns kept up a high tempo of operations, their apparent tactical vulnerability was dominated by their operational safety, since the defender's intercepting and blocking actions would

always be one step behind. In the case of the German Blitzkrieg of 1939 - 1942, the superiority of the Luftwaffe was critical in ensuring the overall advantage of the offense, by providing insurance for the flanks of the invasion columns, as well as by delivering concentrated attacks against such islands of resistance as could not usefully be by-passed.

12. It will be appreciated, however, that the advantage of unrestricted and exclusive air reconnaissance was the most important contribution of air power since the basic weapon of the offense was not firepower but deception.
13. It was deception that provided the security of the main thrusts of penetration, which were hidden in the multiplicity of movements of flank-guard columns, side-raids, and abandoned spurs of advance in the opportunistic flow of the advance. Deception was in fact inherent to the mode of operations: any successful resistance at any one road-block would be reported as a victory - which indeed it was but only at the tactical level - when in fact the only result would be to render such resistance irrelevant as the columns by-passed such points.
14. In the "exploitation" phase, effects purely physical were compounded and usually dominated by the secondary psychological effects of the penetrations and the resulting envelopments. The bulk of the defending forces still holding the front between the narrow segments of penetration would begin to receive reports of LOCs cut, rear headquarters fallen and famous towns to their rear overrun.
15. At the command level, this would precipitate attempts to carry out remedial actions still within the initial conceptual framework of the defense, i.e. attempts to execute "orderly withdrawals" to reconstitute a linear front in the deep rear - beyond the maximum points of enemy penetration. Since that line of frontal reconstitution would be receding ever deeper as the invasion columns continued on their way, the "orderly withdrawal" would immediately acquire the character of a rearward race

(with the abandonment of heavy weapons etc.). Since large infantry-heavy forces would then be racing against small armor-mobile forces, the race could not be won. This would have the effect of gradually demoralizing the commanders responsible for action - which would very soon appear futile.

16. At the troop level, the abandonment of frontal defenses still intact and often entirely unattacked, news of well-known places well behind the front already fallen to the enemy, and finally the actual mechanics of the rearward race (including logistic insufficiency) could easily have catastrophic morale effects, not uncommonly leading to the outright disintegration of units.*
17. The exploitation phase would culminate in double envelopments, with a final stage of annihilation when the slower foot infantry advancing across the abandoned frontage could come to grips with the defending forces trapped in the encirclements.
18. Since the attrition content of the entire action was low, and indeed almost entirely limited to the breakthrough phase, the decisive level was the operational, and indeed purely tactical perspectives of specific battlezones would not be merely incomplete but positively misleading. (Cf. in implementing FM 100-5, an operational perspective would show the follow-up reinforcements peeling off the intercepted axes of advance to pass through the front elsewhere, thus making their tactical success a trap for the defenders.)
19. The power of the Blitzkrieg was not therefore conditioned by the weight of resources employed, and not at all by the firepower of the forces

* In the German Blitzkrieg of 1939 - 1942, the particular form of the employment of the Luftwaffe had its own powerful morale effects: since the air-to-ground potential was used selectively in great concentration (viz. diffuse interdiction efforts) troops witnessing the intensive dive bombing of scattered points would form a grossly inflated conception of the power of the Luftwaffe.

involved; it was rather the method of command, all-mobile organization and the training of the penetration columns that endowed them with a systematic advantage in the observation-decision-action cycle. Against a defender which could itself be superior in the tempo of operations, the tactical weakness of the advancing columns would have become an operational weakness also, with fatal consequences for the offense: (i) then the forces on either side of the breakthrough points could "flow" sideways to close the breakthroughs faster than the enemy forces in front of them (and any reserves) could act to oppose them, or to open alternative points of passage; (ii) then the mobile columns of the defense could intercept, or actually ambush, the invasion columns, thus capitalizing on the inherent tactical weakness of forces which are all flank and no front.*

20. Even this cursory account confined to the operational level** suffices to illustrate the essential principles involved:

A. The main strength of the enemy is avoided as much as possible rather than deliberately engaged.

At the breakthrough phase avoidance is manifest in the fact that only a small fraction of the total frontage is attacked in determined fashion to break open gaps through which the penetration columns can pass. Hence the overall numerical relationship between the total force employed in the breakthrough attempt, and the total defending force holding the full frontage is irrelevant to the outcome. Avoidance is manifest at the operational level in the fact that recognized "strategic"

* That is indeed what happened in the Golan Heights during the 1973 war from the fourth day of the war, when the Israelis were able to outmaneuver the powerful but slower Syrian tank columns and - in more spectacular fashion - were later able to ambush the second Iraqi division sent into combat.

** The two most important tactics involved in the Blitzkrieg operational method were: at the breakthrough stage, wedging and "rolling out", where concentric attacks by infantry-artillery forces open the way for shallow penetrations (by more agile infantry) which then widens the initial passage by attacks on the flank (viz. frontally); and, in the penetration phase, the use of light-armor and motorized (incl. motorcycle) elements as precursors to trigger ambushes and "develop" islands of resistance, so that the tank units can directly by-pass them without delay.

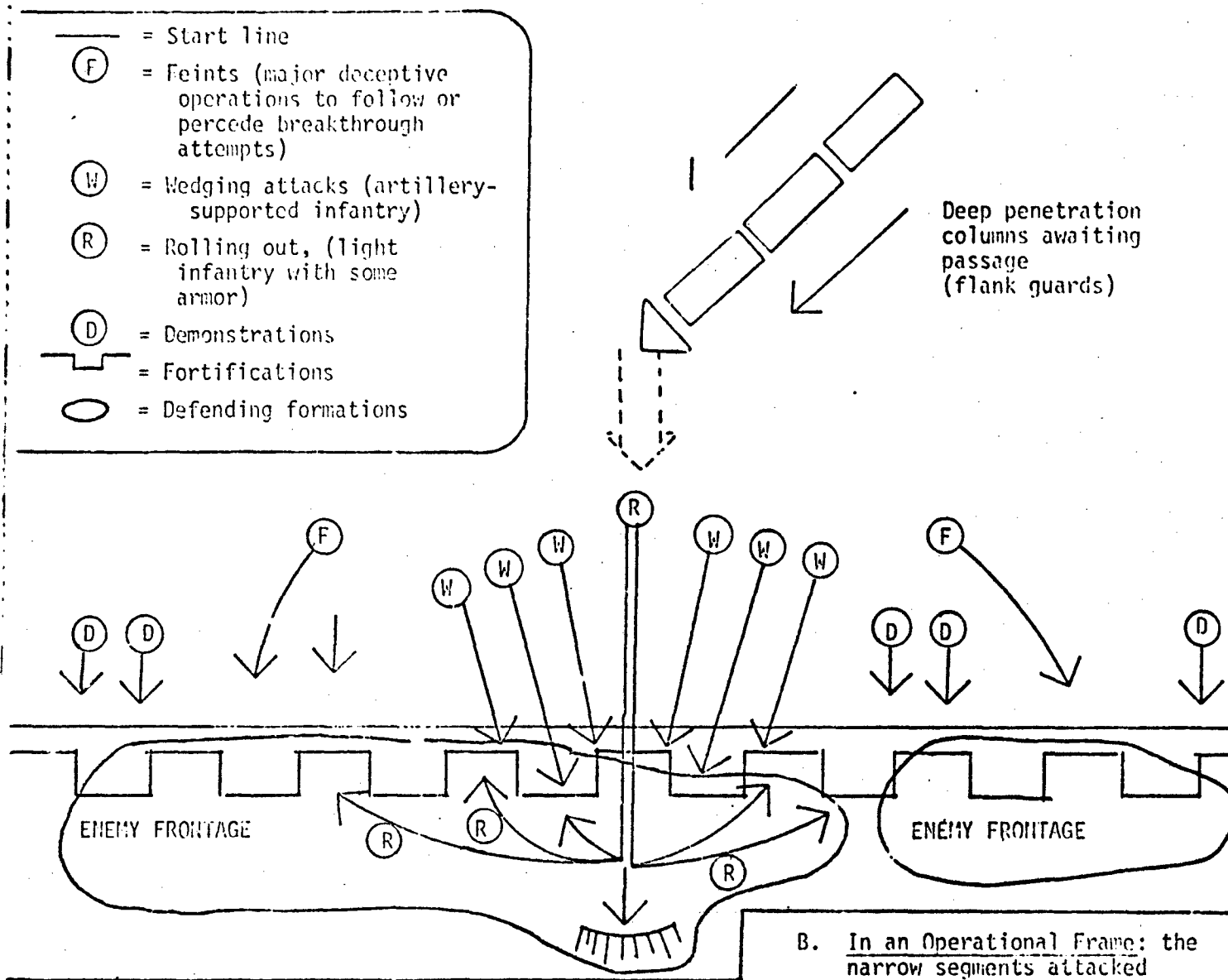
locations are not attacked, the selected points of attempted breakthrough being rather those that happen to be least well-defended (with the proviso that subsequent deep penetrations should be possible from those points). Avoidance is manifest at the tactical level in the use of "rolling out" tactics to minimize frontal engagements as much as possible. In the penetration phase, the salient form of avoidance is tactical: cross-country movement and the flexibility of opportunism (in detailed routing) are exploited to avoid islands of resistance which are by-passed and neither reduced nor even encircled.

- B. Deception is of central importance at every phase. The breakthrough phase inherently presumes successful deception. While the wedging and "rolling out" attacks are launched against selected narrow segments of the frontage, the bulk of the defensive forces along the unattacked frontage must be prevented from moving into the rear of the intended breakthrough points by feints and demonstrations all along the front, to mask the real foci of attack. Alternatively, where multiple breakthrough are attempted, deception can be retroactive insofar as costly persistence is avoided, and whichever breakthroughs are successful become the ones that are exploited. (Spatial and cross-theater mobility assumptions are implied.) Either way, success absolutely requires that the defending command remain in a state of uncertainty. This cannot be achieved by mere secrecy since the maximum period of immunity (even assuming perfect security) could not then extend beyond the outbreak of hostilities. In practice, this elevates the deception plan to full equality with the battle plan; certainly deception planning cannot remain a mere afterthought.

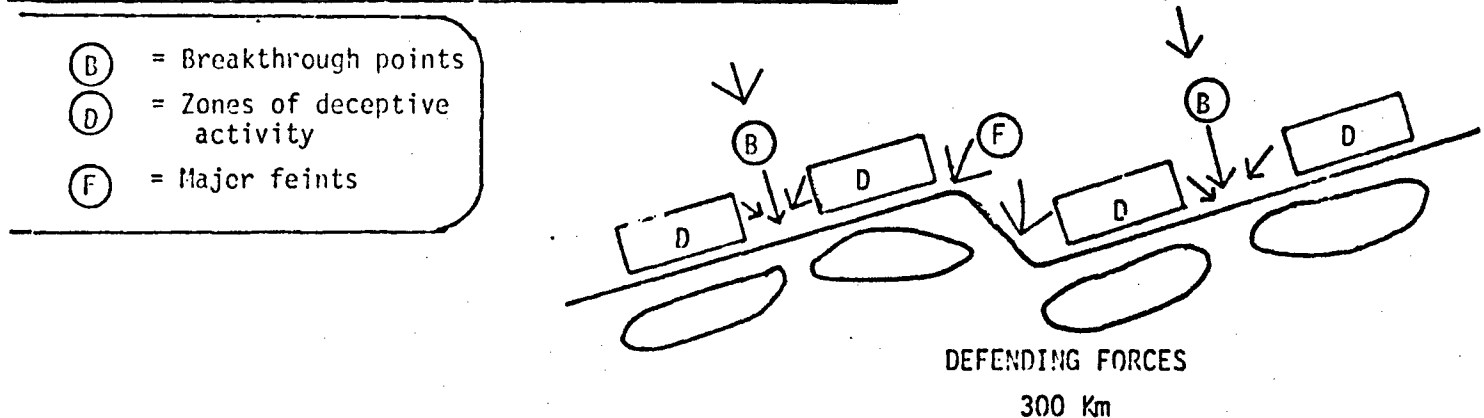
In the penetration phase, deception is again inherent in the mode of operation. Unless the advancing columns of penetration move with sufficient speed and directional unpredictability to be masked by uncertainty they must be highly vulnerable to attacks on their flanks. While it must be assumed that the

THE BREAKTHROUGH PHASE OF THE CLASSIC 1939-1942 BLITZKRIEG

A. In a Tactical Frame: the wedging and rolling-out process



B. In an Operational Frame: the narrow segments attacked



progressive advance of the invasion columns will be reported, these "signals" will be masked by the "noise" of the multiplicity of sightings mentioned above. If the signals-to-noise ratio is high and the defenders can therefore develop a more or less coherent picture of the situation (and do not lose their nerve) then the thin columns of penetration will be as vulnerable operationally as they are tactically.

In the exploitation phase, deception is embodied in the process whereby the columns of penetration cut off and encircle enemy forces that could be much larger than themselves; by then the enemy must be reduced to an incoherent mass incapable of using its strength purposefully. (Cf. the 1941 battles of encirclement in the Ukraine). The most complete achievement of systemic disruption is manifest in the final round-up stage of such battles of encirclement, when the ratio of POWs to captors may be very high indeed; by that stage conventional Order-of-Battle comparisons between the two sides have lost all meaning. It is obvious that such successes cannot be achieved against an undeceived enemy: even at a fairly late stage of disintegration, the victim forces could regroup in improvised fashion to defeat the encirclement forces if they had certain knowledge of the real force ratio.

- C. The intangibles dominate: momentum dominates other priorities, (e.g. firepower capacity; firepower lethality and logistic sustainability). Even in the breakthrough stage, the rolling out process must quickly follow the wedging process for otherwise the forces engaged in the latter become vulnerable to flank attacks. The breakthrough as a whole must be accomplished rapidly because otherwise the defense will be afforded the opportunity to redeploy its forces to secure the segments of the frontage under attack - or at least to hold the shoulders firmly thus creating the threat of a subsequent pinching off. The penetrations in turn must pass through as soon as the way is open to begin their disruptive process (which protects the breakthrough sectors which protects their own line of reinforcement).

Beyond that, the whole operation obviously rests on the ceaseless maintenance of momentum. Organizationally, this implies a very restricted allocation of heavier/slower elements and especially artillery, including SP artillery; even with self-propelled artillery the need to keep the supply tail light and fast-moving will restrict what can usefully be deployed. (In any case, to engage in prolonged barrages would contradict the whole essence of the operation.) Tactically, the imperative of momentum will downgrade the importance of accuracy (for lethality) in such firepower as is employed: in artillery it is suppressive rather than physically destructive firepower that is needed; as far as the small-arms firepower of the infantry is concerned, the troops are trained to scatter suppressive fire with automatic weapons rather than for the slow-paced delivery of aimed shots. Technically this in turn results in a requirement for combat carriers from which troops fire on the move.

In the exploitation phase, the importance of force-ratios as such declines to its lowest point, and the importance of sheer momentum is supreme. Accordingly, a progressive thinning down of the advancing columns is preferable to the road-clogging tail of trucks that (full-force) sustainability across the geographic depth would require. Therefore it is not uncommon that the battle should end with the victors depleted and exhausted, reduced in strength to very little at the culminating moment of battle, and in the climactic place i.e. where the encirclement pincers close. At that time and place, the forces of the offense are quite likely to consist of improvised battle groups made up of the various sub-units that happen to have reached that far. The implied renunciation of full-force sustainability and formation-integrity stands in sharp contrast to the principles of war upheld by attrition-oriented armies.

21. It is clear that the three principles, (i) avoidance of the enemy's main strength, (ii) deception and (iii) the dominance of the intangible (of momentum) are all inter-related and indeed their connection is the true

essence of all offensive operational methods of warfare that have a high relational-maneuver content.

22. First, to be able to apply "localized or specialized" strengths against the enemy's array of forces implies reciprocally that his own strength be successfully avoided. That in turn can only be done by deception, it being only a barrier of ignorance that can prevent the enemy from coming to grips with the attacking forces just as they themselves come to grips with the enemy at places of their own choosing. Deception in turn can only be sustained if the whole operation has a momentum that exceeds the speed of the observation-decision-action cycle of the victim forces; any one deception must be highly perishable so that the barrier of ignorance can only be maintained if rapid-paced operations can generate deceptive impulses faster than they are exhausted. It is because of this inter-relationship that the decisive level of warfare in the relational-maneuver manner is the operational, that being the lowest level at which the different elements can be brought together in an integrated scheme of warfare.
23. The Blitzkrieg was offensive strategically, and in most tactical phases also; it was dependent on the use of armor even if not at all on any superiority in armor capabilities as such; and of course, it was an historical episode fully repeatable only in special circumstances (e.g. the Sinai fighting of 1967). The Finnish operational method for the defense of the Lapland is by contrast strategically defensive and tactically defensive also in most respects; it is based on the assumption that no armor at all will be available to the defense, and it is a contemporary scheme theoretically reproducible in a wide variety of circumstances, subject only to the availability of expendable space. These dramatic contrasts make the parallelism of principles between the Finnish method and the Blitzkrieg all the more persuasive evidence of their universality.
24. Avoidance of the enemy's main strength

At the level of national strategy, this principle is manifest in the

whole conduct of Finnish external policy. Soviet power is deflected by a conciliatory foreign policy; but to set limits on the degree of obedience that Moscow can extract, Finnish policy exploits the Nordic equilibrium, in which Soviet pressure on Finland is inhibited by the expectation that it would be reciprocated by increased NATO activity in Norway and by a proportionate shift in the Swedish alignment in favor of the West.

At the level of theater strategy (military strategy for Finland) this means that the Finnish contribution to the Nordic Balance by a defense of the invasion corridors to Norway and Sweden is more important than the direct defense of the major Finnish population centers in the southern part of the country. Hence the most reliably powerful Soviet capabilities, to invade the well-roaded south and to bomb Finnish cities are avoided. The Nordic equilibrium denies the Soviet Union the full strategic advantage of an invasion; in fact Swedish adherence to NATO would weaken the overall Baltic position of the Soviet Union. On the other hand, Finnish compliance with Soviet foreign-policy desiderata pre-empts the capability to destroy Finnish cities as acts of intimidation or retaliation. This then leaves Finnish theater strategy with a task that is much more manageable than either a defense of the South against invasion or of the cities against air attack: resistance to invasion across the largely uninhabited and mostly roadless Lappland. Even there, the task is not to deny passage to Soviet forces but merely to delay them up to a point and weaken them as much as possible, in order to enhance correspondingly the defensive potential of the NATO forces in northern Norway and of the Swedish forces in the North.

At the operational level, avoidance is manifest in the deployment of the defense and its mode of action. Far from trying to set up an anti-invasion barrier near the Soviet border to intercept Soviet invasion columns as soon as they cross, no firm barriers are to be set up at all on the direct invasion routes to Norway and Sweden. Instead, Finnish forces are to operate on either side of the invasion routes to attack advancing Soviet columns on their flanks after side-stepping their frontal thrusts. Since the Finns can expect neither effective air cover from the small Air Force nor ground-based anti-aircraft defenses of

great value, their protection must come from dispersal and camouflage. Dispersed Finnish forces arrayed in depth from the Soviet border across the full width of the country, are to attack the Soviet columns by a variety of hit-and-run methods including a multiplicity of raids mounted from whatever cover is available, ambushes where practical, non-persistent mortar and artillery fires, and so on.

At the tactical level, avoidance is manifest in the intention to side-step the tank and mechanized elements of the Soviet invasion columns. The Finnish effort will instead be concentrated against the supply trucks, artillery trains, etc. which can be attacked effectively without need of ATGMs or other high-grade anti-tank weapons. In this way, even if the tank and mechanized elements can reach the Norwegian and/or Swedish borders intact, they will do so with their combat support elements weakened, their supply trucks depleted and their LOCs threatened.

25. Deception

At the operational level, deception is intended in the structure of the Finnish forces to be deployed in the North. Large and highly visible formations of brigade and divisional size will only be deployed on the southern fringe of the trans-Lapland invasion routes, ostensibly to provide defense for the small towns in the area, and chiefly Rovaniemi. The main effort on the other hand will be mounted by far less visible company-sized and smaller units detached from the formations (and also by the Sissi raiding teams trained by the Frontier Guards - which may operate beyond the Soviet border). The more visible elements of the Finnish deployment will not therefore seem threatening or indeed even relevant to the Soviet forces, for which any operation mounted southwards from the invasion routes would be a diversion of effort without strategic meaning.

At the tactical level, deception will be a necessary part of any action. Since Soviet invasion columns will routinely provide flank guards for the "soft" elements following in the van of each armored/mechanized contingent, Finnish tactical actions must be based on two separate elements: a diversionary move to distract and temporarily occupy the

relevant flank-guard elements and the attack proper. In a company-level action for example, one platoon might open fire from a safe distance on the soft elements of a Soviet invasion column to attract the attention of the relevant flank-guard forces; as soon as the latter arrive on the scene (by moving up along the axis while the soft elements pause) the diversionary platoon will evade their counter-attack while the rest of the Finnish force is launching the main attack against the now unguarded soft elements. As soon as results have been obtained, Finnish forces will break off the engagement to seek safety in dispersal and cover before regrouping to launch the next action.

Similarly, the Finns cannot mount ambushes against the invasion columns as such, for any ambush astride the main invasion routes would quickly be defeated by the intervention of Soviet armed helicopter elements and/or artillery fires. Ambushing actions therefore require that lesser Soviet contingents (and chiefly flank-guard units) be lured into prepared terrain by some attack against the main columns followed by a deliberately slow retreat. In a battalion-level action for example, a Finnish company may attack the soft elements of a Soviet invasion column, wait until flank-guard detachments arrive on the scene then retreat from the invasion axis allowing the Soviet detachments to pursue it until the place of ambush is reached where the rest of the battalion intervenes.

26. Dominance of the Intangibles: elusive persistence

At the level of theater strategy, the Finnish purpose is to weaken as much as possible the Soviet invasion forces without, however, engaging in costly battles against an enemy so vastly superior in heavy weapons. Hence the imperative of elusiveness. This, incidentally explains the Finns' lack of interest in the acquisition of modern armor (which the Soviet Union offers to Finland at very reasonable prices) or modern artillery weapons (Tampella itself produces an excellent 155mm gun-howitzer - mainly for export), or even anti-tank missiles. Only low-contrast and fully portable weapons (small arms, rocket-launchers and light mortars) are compatible with this principle that runs through the theater strategy, the operational method and the tactics. (Weapons such as TOW by contrast presume motor or helicopter transport with some

man-handling on site, and are not truly portable.) It should be noted that one Finnish armored brigade (equipped with Soviet tanks and BRT-50 and BTR-60 combat carriers) is not the nucleus of an armored force eventually to be acquired nor a gesture towards a quixotic attempt to fight armor with armor but only a training unit which is used very much in the manner of the USAF's aggressor squadrons.

At the operational level, elusive persistence is manifest in the disposition of the forces, to be arrayed in a dispersed manner on east-west axes parallel rather than perpendicular to the east-west axes of a Soviet invasion column. In general, their movements will be south-north in the event of a surprise war (which would find few Finnish forces ready for action in the North), with eventual recovery north-south to the Lapland fringe zone where larger Finnish formations would maintain the semblance of a front.

At the tactical level, the small but important Sissi element would fight as outright guerillas with a special emphasis on offensive demolitions (in Soviet territory too, where productive) while the rest of the forces will fight as light infantry using strike/withdraw routines with a heavy emphasis on the use of mines, to the extent that mines remain available. (Withdrawing Finnish strike groups would whenever possible leave mines astride their paths of retreat.)

C. OPERATIONAL METHODS AND MILITARY MINDSETS

1. So very different in all other respects, the two examples here reviewed share one fundamental thing in common: in both cases the genesis of the military ideas involved was a recognition of material weakness, which ensured that any symmetrical application of forces would guarantee defeat. In the German case, the front-piercing Blitzkrieg was the alternative to the materialschlacht on elongated fronts that Germany could not win, if only because blockade would reduce progressively the strength of a Germany inadequately provided with raw materials. In the Finnish case, the gross imbalance in military power results in a situation in which Finnish forces can only provide a limited war-fighting capacity in a limited part of the national territory even when the methods used entail a degree of avoidance which approaches that of outright guerilla warfare. (In a veritable guerilla, however, time substitutes for depth, whereas in the Finnish case the operational dimension is still geographic depth.) The product is a deterrent scheme of warfare hinged to the Nordic equilibrium, whose purpose is indeed to enhance the deterrent quality of that larger multi-national scheme.
2. By contrast, a sense of material superiority inspires quite other priorities. In the American case notably, the ruling priority historically has been to accelerate the evolution of the conflict in a parallel action: maximal mobilization of the economy to achieve the fastest possible build-up of forces upon the outbreak of conflict, and the deployment of the largest forces deliverable against the largest concentrations of enemy forces to maximize the overall rate of attrition. From this, a broad-front advance theater strategy directly followed, if only because the broader the advance, the greater is the usable transport capacity on the ground and therefore the larger forces that are deployable and the greater their attritive capacity. At the operational level - a level not at all important in this style of warfare - little more was needed than to coordinate the tactical action which in turn was simple in nature, frontal attacks with maximal force being preferable to more indirect tactics.

3. The principles of avoidance and deception were not absent in this style of warfare historically but they were largely confined to the level of theater strategy specifically rather than higher or lower levels. (The selection of Normandy of all places on the French Atlantic Coast for the opening of a second front was of course a most notable example of avoidance and deception; but the selection of W. France itself contradicted the principle of avoidance - which would have favored other places offering greater outflanking opportunities, e.g. Southern France or, better, the Balkans.) At the operational and tactical levels on the other hand, avoidance and deception were little used since they stand in direct conflict with the imperative of accelerating as much as possible the application of force upon the enemy's array. The aim at those levels was not to obtain high payoffs but rather to obtain reliable payoffs on the largest possible scale; at the relevant levels of command, success was measured by the "flow rate" that could be sustained in directing combat means forces against the enemy.
4. The principle of momentum was manifest only at the highest level of all, the level of grand strategy whence there came insistent pressures for quick results. It was certainly incompatible with theater strategies of broad-front advance, which of necessity result in a gradual progression rather than any rapid penetration; nor was it compatible with operational methods that amounted to little more than the alignment of tactical actions - or with the tactics. A pattern of schematic frontal attacks would naturally result in gradual step by step actions in a deliberate sequence of forward movement, sustained attack, regroupment, resupply and reinforcement, and then more forward movement, etc. At both the operational and tactical levels the stress on maximizing attritive results stands in direct contradiction with the maintenance of momentum; the former requires that the integrity of formations be maintained to maximize the efficiency of their firepower production, while the speed of the action cannot exceed the rate of forward movement that the artillery and its ammunition supply can sustain. By contrast, in rapid-paced actions opportunistic routing is de rigueur and the breakdown of formations into ad hoc battle groups is virtually routine, while a

progressive decline in the volumes of sustainable firepower must be accepted as a natural consequence of rapid penetrations in depth since "soft" supply vehicles cannot transit in large numbers until enemy resistance ends.

5. Of late, as a result of the experiences of Korea and Vietnam a "short-war" imperative has emerged as far as Third World involvements are concerned, on the presumption that the contemporary American political system cannot sustain prolonged conflict. To the extent that the short-war imperative is accepted, a serious problem emerges in its conflict with a military style that pursues reliable results, but which also precludes coup de main methods that can produce quick results. In this regard, the American military mindset, still firmly rooted in attrition methods, is not congruent with what has become an accepted political imperative. Nevertheless far from inspiring any structural change, the poor fit between the political imperative and the military methods of preference has not even been recognized.
6. Worse, it also appears that the American military mindset is not congruent with the European military balance either. Thus in the Central European theater of NATO, U.S. ground forces are still deployed to implement pure attrition tactics that presume a net materiel superiority - or more precisely, a net superiority in firepower production. The expected enemy, however, is in fact superior in firepower capacity overall, and would most likely achieve even greater superiorities at the actual points of contact, where its column thrusts would collide with the elongated NATO frontage. Just as against an enemy definitely inferior in firepower capacity the current tactics would virtually guarantee victory, (albeit at a full price), against a materially superior enemy they virtually guarantee defeat.
7. Given the defensive orientation imposed by the grand strategy of the alliance, only some relational-maneuver operational method based on the operational principles of avoidance (to side-step the major Soviet thrusts), deception (to mask the defense), elusiveness (in small scale counterattacks) and momentum (on the counterstroke) would offer some

hope of victory, although with considerable risks. On the other hand, it is also true that the politically-imposed theater strategy of a Forward Defense well forward precludes the adoption of the only operational methods that would offer some opportunity to prevail over a materially more powerful enemy.

SOME NOTES ON THE GERMAN STYLE OF WARFARE

1. The German military mindset is oriented to problem-solving with solutions being ad hoc and specific to the context. The classic exposition on the German style is of course that of Clausewitz, at the theater-strategic and operational levels; the best tactical exposition, however, is Rommel's Infantry Attacks. The German system has its beginnings with Frederick the Great. But it mainly reflects the lessons of the Napoleonic Wars and the military reforms of Scharnhorst, and Gneisenau, institutionalized in the Kriegsakademie and the Great General Staff and perfected by H. von Moltke.
2. The approach institutionalized in the Great General Staff was an attempt to maintain intellectual vigor and vitality in the study and execution of military affairs. It is for this reason that the German style has always remained intuitive, in order to retain a richness of ideas and approaches. No attempt was ever made to distill the content of the methods into a set of rules and procedures, not because it could not be done, but because of the fear any such rules would soon become empty of content (cf. the empty clichés frequently attributed to Clausewitz and Jomini). By avoiding the stereotypes inherent in school solutions and cookbook approaches, German military problem solving seeks to evoke dynamism with a corresponding ability to respond to outside changes in technology and the theater environment (cf. the instant adaptation to desert warfare by the Afrika Corps).
3. While there are no set patterns of doing anything, there are three central concepts: the Schwerpunkt, Die Lücken und Flächentaktik, and the Auftragstaktik. The Schwerpunkt is the focus of German operations. It is often loosely interpreted as meaning the point of main effort; but this is only part of its meaning. Command attention is focused at that point; the forces will impact there, but their location can be elsewhere. The deeper meaning of Schwerpunkt is actually the literal one of a center of gravity. For if the opponent can be fractured at his point of gravity,

the enemy system is liable to fall apart, much like a diamond can be shattered by a tap at the right spot. That any army can be shattered is taken as an immutable historical fact. The difficulty of course is to find the right "spot" for the "tap", for these depend on many variables and change with time. Applications change with circumstances; but history can be mined for its rich repertoire of ideas, some of which will be suited for eclectic application in new forms.

4. As a corollary, if events fall into place at the center of gravity, occurrences elsewhere are of little moment, implying a corresponding ability to take (apparent) risks and to obtain force economies in secondary sectors.
5. While the Schwerpunkt defines the location(s), the actual manner for shattering (the Germans use the word 'smash') the enemy is framed from the operational theory of the die Lücken und Flächentaktik, or tactics of the surface and gap. At its simplest, the theory implies that because forces (attackers and defender) must be distributed over a surface, elements are by definition compartmentalized and potentially lacking in mutual support. Accordingly gaps in space or time exist between elements, presenting opportunities for systematically boring in and defeating the enemy in-detail and collapsing his ability to fight as an organized entity. The difficulties are of course in finding, recognizing and exploiting the opportunities.
6. Working battle teams (Kampfgruppen) into the interstices of opposing formations takes many forms and varying techniques, deception and surprise being one of the few immutables. The objectives remain constant: isolating and destroying enemy segments before they can be supported and hitting enemy tactical units in flank and rear before they can front about. The defense and offense are generically similar, the difference being in timing. In the offense the boring-in is immediate. In the defense, the attacking thrust vector must first be sidestepped (= vented). At the tactical and operational levels the (gross) technique is the positioning of units in flank and rear of the attacking enemy. Positioning

can be by pivoting in-place or by working around the enemy thrusts.*

7. The third concept, mission orders (Auftragstaktik), follows from the need to find, recognize and exploit opportunities. This by definition requires a front-led system: each commander is allowed his own initiative within the guidelines of the overall objective and plan. On the attack, it is a flowing water scheme with forward units seeking crevices and rearward units flowing in the wake of least resistance. On the defense, it is a shaping scheme: the opponent partly by his own actions is to be positioned disadvantageously. In both attack and defense, the next-higher commander observes and decides the next action. In the attack, he reinforces the most favorable crevices; in the defense he may immediately counterattack to smash local intruders or he may continue the setting-up process for a higher-level counterattack.
8. The German command approach reflects these goals: initial events are planned in detail; thereafter events are played "by ear" by front-line commanders. Once the operation begins, events unfold as opportunities are exploited. There is no detailed plan after D+1. The theory of the surface and gap is the common philosophy and the Schwerpunkt is the device for channeling common effort; but this itself will be shifted about according to actual developments.
9. Through military education and by devising an operational framework that is centrally shaped but led from the front, the Germans have been able to internalize command decisions, minimizing their dependence upon elaborate command and control networks. The command system is held together by the physical presence of commanders who locate themselves (plus a very small command group) at the critical fissures (Schwerpunkte). From there, they personally observe the shaping of events by subordinates and decide their exploitation on-the-spot. Details of implementing the

decision are then worked out by the chief of staff (= G-3s operations officer) back at the unit command post.

10. The cost of this command system is high casualties among Corps-level general officers (in World War II apparently a third were killed in combat, largely by artillery). Their purpose in being forward is for decision-making; "leadership" is only a by-product. The result is that time is stripped out of the command and control loop and the tempo of the operation is correspondingly increased, making it more difficult for the opponent to react coherently. The ultimate result is a command and organizational agility that amounts to a military ju-jitsu.